Alaska EPSCoR

EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH

Alaska ACE: Adapting to Changing Environments

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PROJECT STRUCTURE

Coordination, Integration and Synthesis Group

Cyberinfrastructure

3 Test Cases

Education, Outreach and Diversity Group

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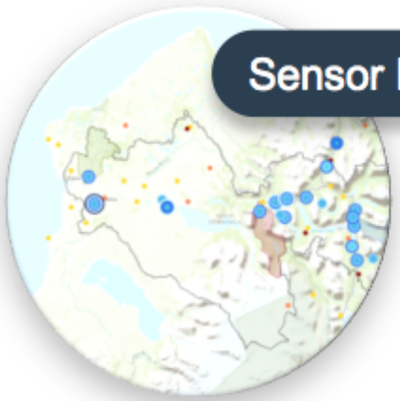
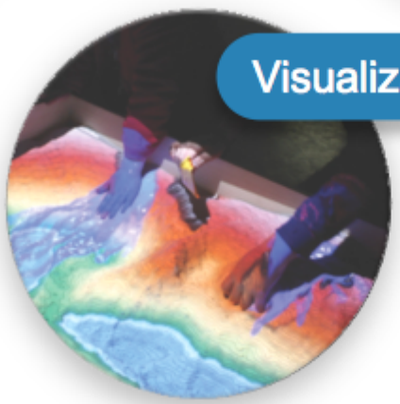
PROJECT GOALS

1. HELP COMMUNITIES TO MAKE ADAPTATION DECISIONS

2. IMPROVE DATA STREAMS AND DELIVER PRODUCTS





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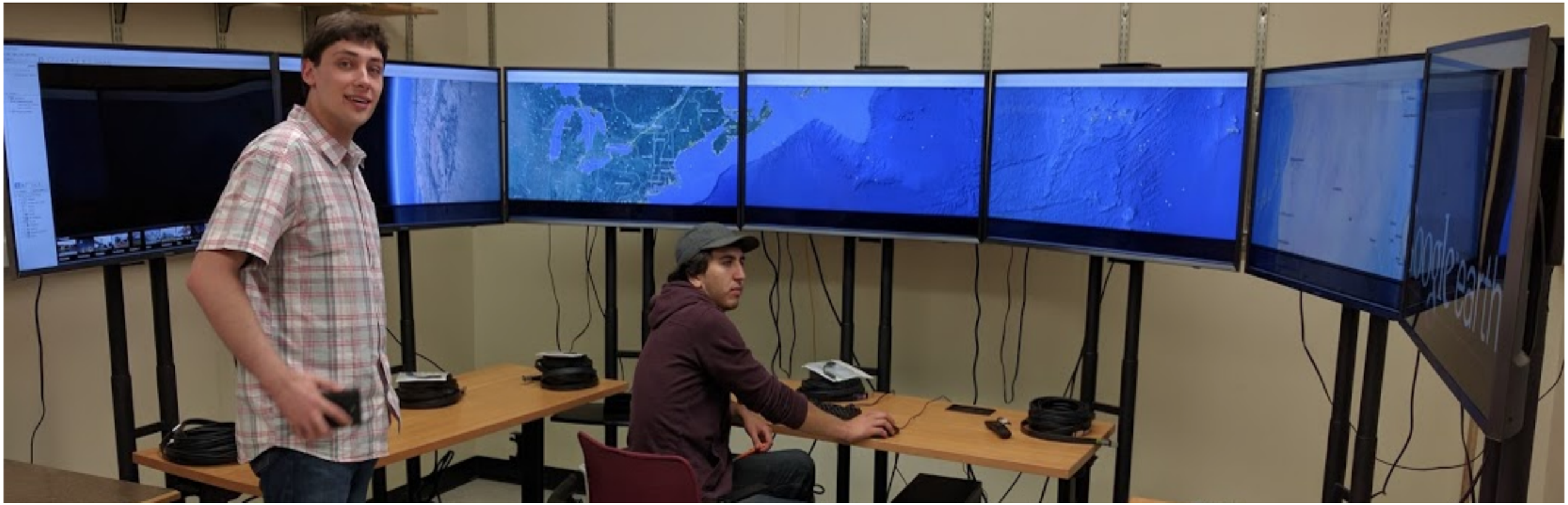
DECISION THEATER NORTH

The mission of Decision Theater North is to provide a cutting-edge, semi-immersive, visual environment to facilitate dialogue and decision-making by agencies, industry, communities and academia.

DECISION THEATER NORTH

DEVELOPMENT SPACE



Testing and learning space for technology and content creation.

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Decision Theater North is a gathering place for people to discuss issues that span the boundaries of location, time, and discipline.

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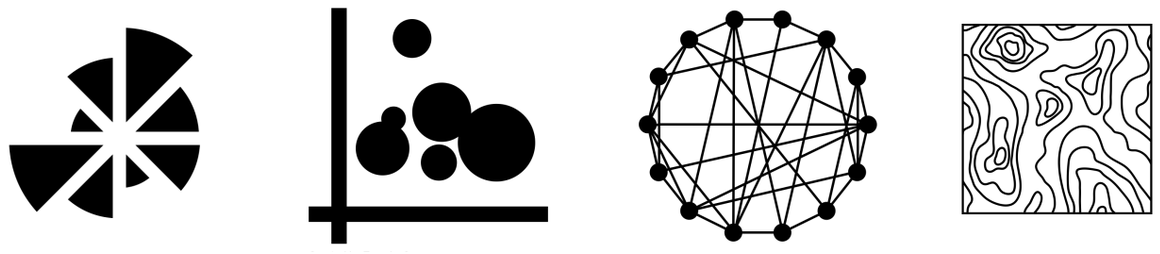
LARGE SCREEN DISPLAYS TURN DATA INTO DECISIONS

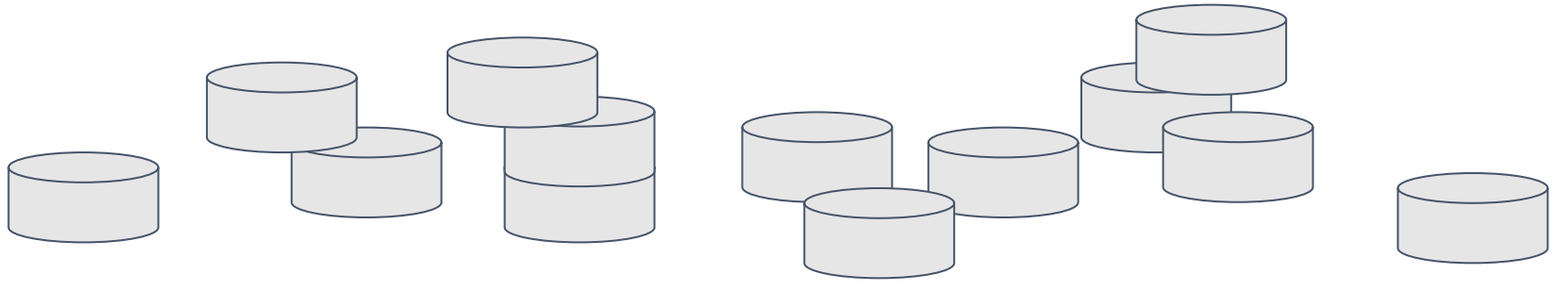
Decisions

Information

Visualizations



Data



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BENEFITS OF LARGE HIGH RESOLUTION DISPLAY ENVIRONMENTS

- Reducing window switching, **see detail and context** simultaneously [Czerwinksi03, Ball05]
- Helps **externalize the working memory** of teams [Andrews10]
- **Increase parallel processing** amongst team members [Park03]
- Improves **location memory** of information [Tan01]
- Perceptual scalability: helps user **performance keep pace** with increasing data size [Yost07]
- Results in greater **confidence in conclusions** drawn when able to see all info at once [Ball05]
- Users begin to look for higher level **patterns and relationships** (ic.e. they start to look for the bigger picture) [Reda12]

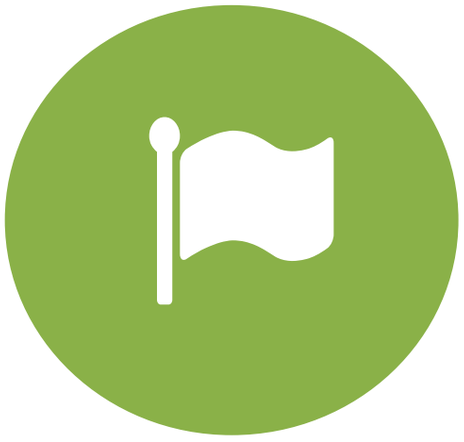
DATA TO DECISIONS

PEOPLE

desirability

DATA

reliability



SOLUTIONS

sustainability

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DECISION THEATER NETWORK

DECISION THEATER NORTH

ASU Decision Theater
Arizona State University
Tempe, AZ

ASU McCain Center Decision Theater
McCain Center
Washington, D.C.

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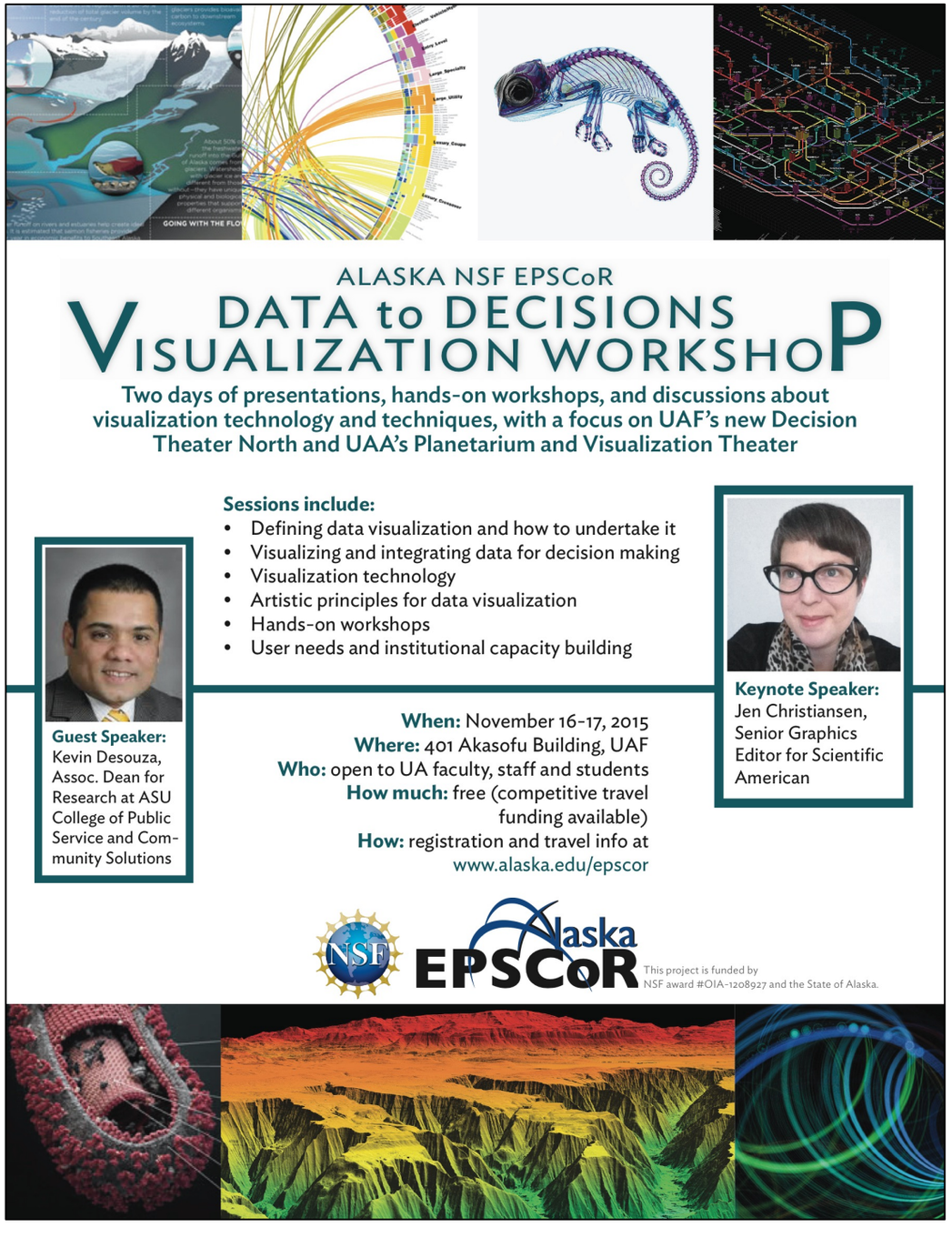
DATA VISUALIZATION

- Hosting Data to Decisions Workshop
- Awarding Data to Decisions Minigrants
- Engaging new projects and bringing awareness to existing UA capabilities.



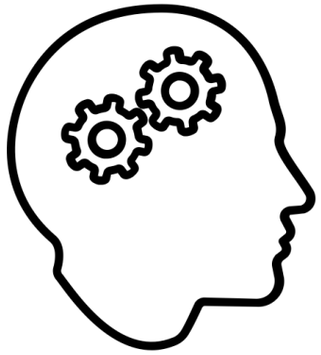
GROUP FACILITATION

- Enhancing skill sets at UA
- Focusing on leadership and communication skills
- Supporting UA-community stakeholder connections

VIRTUAL REALITY TECHNOLOGY

- Developing a community of interested supporters across campus
- Enhancing our ability to do Virtual Reality work at UA
- Adding capacity to Decision Theater North and Decision Theater Network

LARGE SCREEN DISPLAYS SUPPORT PEOPLE AND TEAMS



How does cognition operate when tackling complex issues?

How does memory influence teams?

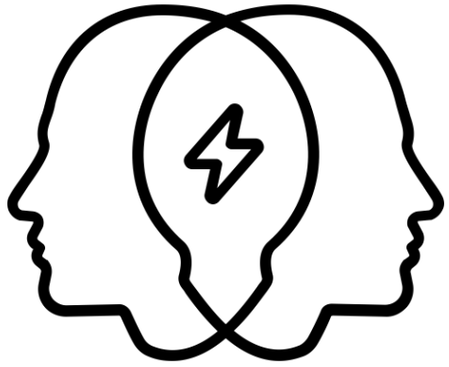
SHARED KNOWLEDGE

COGNITION AS A TEAM

COMPUTER-SUPPORTED COOPERATIVE WORK

DISTRIBUTED SITUATIONAL AWARENESS

COMPLEX COLLABORATIVE ENVIRONMENTS



How do mental models inform how a team functions?

How can we improve team effectiveness?

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WHAT HAVE WE DONE IN DECISION THEATER NORTH?

USER	Planning	Decision-making	Complex proposal writing	Outreach	Community Engagement	Education	Command Center	Presentation	Visualization-rich	Data-rich	Computation-rich
Totals:	**8**	**10**	**4**	**9**	**10**	**6**	**1**	**10**	**6**	**2**	**1**
Alaska Entrepreneurial Tech Transfer Workshop planning group	X	X			X						
Alaska EPSCoR Data to Decision Visualization Minigrants		X			X			X	X	X	X
Alaska EPSCoR Modern Blanket Toss						X		X	X		
Alaska EPSCoR Track 1 proposal writing	X		X								
Alaska State Legislative visits				X							
Alaska Observers and Knowledge Hub Science Steering Committee		X			X						
Alaska Satellite Facility 25th Anniversary				X				X			
Alaska Science and Research Academy				X		X			X		
AlaskaView Earth Observers Day					X	X					
Arctic Collaborative Workshop TTX attendees				X				X			
Arctic Innovation Competition					X						
Arctic Science Summit Week				X							
FNSB building height analysis for policy		X									
FNSB F-35 Eielson squadron planning	X	X									
FNSB FEMA Tabletop exercise		X					X				
FNSB webinars - planning, ESRI, social network analysis	X										
Geophysical Institute Design Services					X			X			
Lockheed Martin meeting				X				X			
NASA Arctic Collaborative Environment	X	X									
National Park Service meetings				X							
NOAA Sandy FCDAS visit with Steve Voltz								X	X		
NOAA Satellite Liaison - Introduction to NWS and Polar Satellites					X	X					
NSF			X								
NSF High Latitude Food Energy and Water workshop	X			X							
NSSI Arctic Observers Network Stakeholders Meeting		X			X						
Thesis Defenses						X		X	X	X	
Tours				X	X						
UA enrollment strategy modeling and planning	X	X									
UAF Active and Innovative Minds Student Group					X	X					
UAF Chapter Association for Computing Machinery											
UAF College of Fisheries and Ocean Sciences								X	X		
UAF EOC development											
USDA			X								
USDA Climate Science Hub	X	X	X					X			

THE FUTURE OF DECISION THEATER NORTH

Decision Support

Interdisciplinary and Team Science

Leadership and Communication

Data Visualization

Group Facilitation

Virtual Reality

. . . IN SUPPORT OF OUR COMMUNITIES

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